

REMARKS

Claims 1-17 are all the claims presently pending in the application. The specification and claims 1 and 3 are amended to more clearly define the invention and claims 4-17 are added. Claims 1 and 15 are independent.

These amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Applicants also note that, notwithstanding any claim amendments herein or later during prosecution, Applicants' intent is to encompass equivalents of all claim elements.

Claims 1-2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Okuda et al. reference. Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the Okuda et al. reference in view of the Hoffmann reference.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary embodiment of the claimed invention, as defined by, for example, independent claim 1, is directed to a cross shaft joint tiltably coupling two shaft members to each other. The cross shaft joint includes a cross shaft with four shaft portions and is arranged between the two shaft members and outer ring cups rotatably provided to the four shaft portions, respectively. The outer ring cups are adapted to be coupled to corresponding shaft members. An attachment portion to which a balance weight for balancing the outer ring cups can be attached is formed on at least one of the outer ring cups.

Conventional cross shaft joints have outer ring cups that are directly fixed to the

corresponding shafts. These outer ring cups are generally forged. These outer ring cups are typically attached to the shaft members by the manufacturer and the assembly is balanced by attaching a balance piece to the shaft members using a balance machine.

When a customer exchanges parts within the cross shaft joint, the balance is lost and must again be obtained. However, customers do not generally have the balance machine that the manufacturer used to obtain a balance. Thus, the customers are not capable of balancing a cross shaft joint.

In stark contrast, the present invention provides a cross shaft joint in which an outer ring cup includes an attachment portion for attaching a balance weight. In this manner, the customer may balance the cross shaft joint without having a balance machine.

II. THE PRIOR ART REJECTIONS

A. The Okuda et al. reference

Regarding the rejection of claims 1-2, the Examiner alleges that the Okuda et al. reference teaches the claimed invention. Applicants submit, however, that there are elements of the claimed invention which are neither taught nor suggested by the Okuda et al. reference.

None of the applied references teaches or suggests the features of the claimed invention including a cross shaft joint with an attachment portion to which a balance weight for balancing the outer ring cups can be attached is formed on at least one of the outer ring cups. As explained above, this feature is important for enabling a customer to balance the cross shaft joint without using a balance machine.

The Okuda et al. reference discloses a device for fastening a needle case to a yoke in a universal joint. In particular, the Okuda et al. reference discloses a needle case 1 having a key

2 that is trapezoidally shaped and which fits into a keyway 4 in a yoke 3. The Okuda et al. reference further discloses a wedge 5 which fits between the key 2 and the keyway 4 to lock the key 2 into the keyway 4. The wedge 5 includes a threaded bore 7 in a head 6 so that the wedge 5 may be removed from the keyway 4.

The Examiner appears to allege that the wedge 5 corresponds to the claimed attachment portion. However, the wedge 5 is not formed on an outer ring cup as recited by independent claim 1. Rather, the wedge 5 is a completely separate and independent piece.

Indeed, for the sake of argument, if the needle case 1 were modified such that the wedge 5 was formed on the key 2, the device that is disclosed by the Okuda et al. reference would be inoperable for its intended purpose.

The key 2 is sized such that there is a clearance S between the key 2 and the keyway 4 so that the key 2 can be inserted into the keyway 4. If the key 2 were modified such that the wedge 5 was formed on the key 2 the key 2 would no longer be able to be inserted into the keyway 4. In other words, it would be impossible to insert the key 2 into the keyway 4 because the clearance S would no longer exist.

Regarding new independent claim 14, the Okuda et al. reference clearly does not teach or suggest at least one of the outer ring cups adapted to receive a balance weight.

Therefore, the Okuda et al. reference does not teach or suggest each and every element of the claimed invention and the Examiner is respectfully requested to withdraw this rejection of claims 1-2.

B. The Okuda et al. reference in view of the Hoffman reference

The Examiner alleges that the Hoffman reference would have been combined with the Okuda et al. reference to form the claimed invention. Applicants submit, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

None of the applied references teaches or suggests the features of the claimed invention including a cross shaft joint with an attachment portion to which a balance weight for balancing the outer ring cups can be attached is formed on at least one of the outer ring cups. This feature is important for enabling a customer to balance the cross shaft joint without using a balance machine.

As explained above, the Okuda et al. reference clearly does not teach or suggest this feature of the claimed invention.

The Hoffman reference does not remedy the deficiencies of the Okuda et al. reference.

Indeed, the Examiner does not allege that the Hoffman reference remedies these deficiencies.

Further, the Hoffman reference is not available as prior art against the present application because the Hoffman reference is non-analogous art. As such, the Examiner may not rely upon the Hoffman reference.

“In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” (M.P.E.P. § 2141.01(a)).

In this instance, the Hoffman reference is neither 1) within the field of applicant’s

endeavor; or 2) reasonably pertinent to the particular problem with which the inventor was concerned.

Applicants' endeavor is within the field of cross shaft joints. Indeed, the entire application is only concerned with cross shaft joints.

In stark contrast, the Hoffman reference is only concerned with a completely different and unrelated field of outer envelope trochoidal rotary devices.

Therefore, the Hoffman reference is clearly not with the field of applicants' endeavor.

The Hoffman reference is also not reasonably pertinent to the particular problem with which the inventor was concerned.

As explained above, the inventors of the present invention were concerned with the problem of enabling a customer to balance a cross shaft joint without requiring the use of a special balance machine.

In stark contrast, the Hoffman reference is concerned with the completely different and unrelated problems of balancing an outer envelope trochoidal rotary device. (Col. 2, lines 1-3).

The Hoffman reference clearly has absolutely nothing to do with the problem that the inventors were concerned with of enabling a customer to balance a cross shaft joint without requiring the use of a special balance machine.

Indeed, the Hoffman reference does not have anything at all to do with cross shaft joints, let alone the problem of enabling a customer to balance a cross shaft joint without requiring the use of a special balance machine.

Therefore, the Hoffman reference is neither 1) within the field of applicant's endeavor; or 2) reasonably pertinent to the particular problem with which the inventor was

concerned. Thus, the Hoffman reference is non-analogous art and, as such, is not available to the Examiner to apply against the present invention.

Additionally, one of ordinary skill in the art would not have combined the Hoffman reference with the Okuda et al. reference because these references are directed to completely different and unrelated problems.

Specifically, the Okuda et al. reference is concerned with the problem of providing a fastening device for a universal joint which is capable of fastening the needle case to the yoke with sufficient tightness and rigidity without resorting solely to the fastening force of fastening bolts and without increasing the diameter of the bolts. (Col. 1, lines 55 - 62).

Rather, and in stark contrast, the Hoffman reference is concerned with the completely different and unrelated problem of balancing an outer envelope trochoidal rotary device.

One of ordinary skill in the art who was concerned with providing a fastening device for a universal joint which is capable of fastening the needle case to the yoke with sufficient tightness and rigidity without resorting solely to the fastening force of fastening bolts and without increasing the diameter of the bolts, as the Okuda et al. reference is concerned, would not have referred to the Hoffman reference, and vice-versa, because the Hoffman reference is concerned only with the completely different and unrelated problem of balancing an outer envelope trochoidal rotary device. Thus, these references would not have been combined.

Therefore, the Examiner is respectfully requested to withdraw the rejection of claim 3.

III. FORMAL MATTERS AND CONCLUSION

The Office Action objects to the drawings. This Amendment encloses a replacement drawing sheet which corrects Figure 1 to include the reference numeral "41D." Applicants respectfully request withdrawal of this objection.

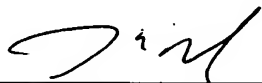
In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-17, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 12/1/05



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AMENDMENTS TO THE DRAWINGS

This Amendment encloses a replacement drawing sheet which corrects Figure 1 to include the reference numeral "41D." Applicants respectfully request withdrawal of this objection.

Attachments:

Annotated Sheet Showing Changes

Replacement Sheet

